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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
JARRETT, SCOTT L	

ART UNIT	PAPER NUMBER
3623	

DATE MAILED: 08/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/945,193	SUERMONDT ET AL.	
	Examiner	Art Unit	
	Scott L. Jarrett	3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *28-54* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *28-54* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Requirement for Information – USC § 1.105

Applicant and the assignee of this application are required under 37 CFR 1.105 to provide the following information that the examiner has determined is reasonably necessary to the examination of this application.

Examiner's research indicates that the applicant and/or assignee had a system/method for predicting a set of parts for an onsite repair of a product more than one year prior to the filing of the instant application as evidenced by at least the following references cited in the Office Action dated April 14, 2006

- Terry, Lisa, The Forgotten Supply Chain (June 2001; "HP Service Planning", Pages 3-4); and

- Xelus to Add Field-Based Planning to Compaq's Service Supply Chain, Increase Responsiveness in Its Global Service Network (March 2001; "Compaq will use XelusExtend to increase the level of optimization across its entire service enterprise, with implementation in the United States early this year and a global rollout in late 2001 and 2002. XelusExtend will be integrated with XelusPlan, the primary service inventory planning system that Compaq has been using for **four years**.", emphasis added, Paragraph 4, Page 1).

In response to this requirement, please provide the names of any products or services that have incorporated the claimed subject matter of predicting a set of parts for onsite repair of a product, service inventory planning, service planning or service

parts logistics/planning/management, specifically information related to the Applicant's and/or Assignee's usage of XelusExtend, XelusPlan or similar products/services.

In response to this requirement, please provide the citation and a copy of each publication which any of the applicants authored or co-authored and which describe the disclosed subject matter of predicting a set of parts for onsite repair of a product, service inventory planning, service planning or service parts logistics/planning/management.

In response to this requirement, please provide the citation and a copy of each publication that any of the applicants relied upon to develop the disclosed subject matter that describes the applicant's invention, particularly as to predicting a set of parts for onsite repair of a product, service inventory planning, service planning or service parts logistics/planning/management.

For each publication, please provide a concise explanation of the reliance placed on that publication in the development of the disclosed subject matter.

In response to this requirement, please state whether any search of prior art was performed. If a search was performed, please state the citation for each prior art collection searched. If any art retrieved from the search was considered relevant to demonstrating the knowledge of a person having ordinary skill in the art to the disclosed (predicting a set of parts for onsite repair of a product, service inventory planning,

service planning or service parts logistics/planning/management), please provide the citation for each piece of art considered and a copy of the art.

In response to this requirement, please provide the citation and a copy of each publication that any of the applicants relied upon to draft the claimed subject matter. For each publication, please provide a concise explanation of the reliance placed on that publication in distinguishing the claimed subject matter from the prior art.

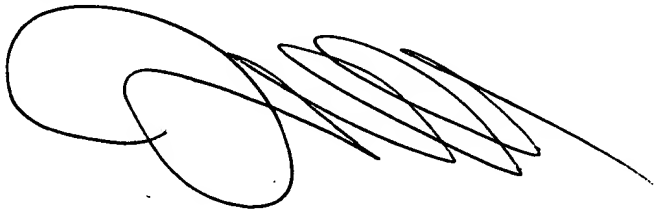
In responding to those requirements that require copies of documents, where the document is a bound text or a single article over 50 pages, the requirement may be met by providing copies of those pages that provide the particular subject matter indicated in the requirement, or where such subject matter is not indicated, the subject matter found in applicant's disclosure.

The fee and certification requirements of 37 C.F.R. § 1.97 are waived for those documents submitted in reply to this requirement. This waiver extends only to those documents within the scope of this requirement under 37 C.F.R. § 1.105 that are included in the applicant's first complete communication responding to this requirement.

Any supplemental replies subsequent to the first communication responding to this requirement and any information disclosures beyond the scope of this requirement under 37 C.F.R. § 1.105 are subject to the fee and certification requirements of 37 C.F.R. § 1.97.

The applicant is reminded that the reply to this requirement must be made with candor and good faith under 37 CFR 1.56. Where the applicant does not have or cannot readily obtain an item of required information, a statement that the item is unknown or cannot be readily obtained will be accepted as a complete response to the requirement for that item.

This requirement is an attachment of the enclosed Office action. A complete response to the enclosed Office action must include a complete response to this requirement. The time period for reply to this requirement coincides with the time period for reply to the enclosed Office action, which is 3 months.



DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1 .17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.1 14, and the fee set forth in 37 CFR 1 .17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.1 14. Applicant's submission filed on July 12, 2006 has been entered.

Applicant's amendment canceled claims 1-27 and added new claims 28-54. Currently claims 28-54 are pending.

Response to Amendment

2. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action.

Response to Arguments

3. Applicant's arguments with respect to claims 28-54 have been considered but are moot in view of the new ground(s) of rejection.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., cost of mis-predicting parts includes the cost of transporting parts that are not needed for a successful repair) are not recited in the rejected claim(s). Although the

claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

It is noted that the applicant did not challenge the officially noticed facts cited in the previous office action(s) therefore those statements as presented are herein after prior art. Specifically it has been established that it was old and well known in the art at the time of the invention:

- to automate a manual method/process;

- to track parts through all stages (statuses, availability, etc.) of the parts (materials, components, items, kits, etc.) life cycle wherein the tracking provides a plurality of information that enables businesses to do such things as improve the system's ability to estimate (determine, predict, forecast, etc.) stocking/inventory levels;

- to utilize averages to represent/generalize numbers and/or using averages when individual/specific data is unavailable;

- to utilize performance evaluations to identify and implement training for employees (staff, personnel, etc.) wherein the evaluations assist in the selection and/or development of training to address identified areas requiring improvement;

- to identify/flag information that the business/system deems important (relevant, necessary, required, etc.) for users to consider (review, view, etc.); and

- to carry/transport service parts (tools, kits, items, components, supplies, materials, etc.) utilizing a repair vehicle (can, van, truck, etc.) wherein the vehicle(s) provides a convenient method for transporting the technician to/from the repair site.

Claim Rejections - 35 USC § 101

4. Claims 43-54 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding Claims 43-54, for a claimed invention to be statutory, the claimed invention must produce a useful, concrete, and tangible result.

In the present case, the claimed invention merely compiles and stores a plurality of data (repair history, cost) and calculates a waste metric; while the compilation of data may have some have some real world value (i.e. utility/usefulness) there is no requisite functionality present to satisfy the practical application requirement nor are there any "acts" which transform the data and/or cause a physical transformation to occur outside the computer (i.e. not concrete or tangible) therefore the invention as claimed does not produce a useful, concrete, *and* tangible result.

Merely claiming nonfunctional descriptive material, **i.e.**, abstract ideas, stored in a computer-readable medium, in a computer, on an electromagnetic carrier signal does not make it statutory. See Diamond v. Diehr**,** 450 U.S. 175, 185-86, 209 USPQ 1, 7-8 (1981) (noting that the claims for an algorithm in Benson were unpatentable as abstract ideas because "[t]he sole practical application of the algorithm was in connection with the programming of a general purpose computer."). Such a result would exalt form over substance. In re Sarkar, 588 F.2d 1330, 1333, 200 USPQ 132, 137 (CCPA 1978) ("[E]ach invention must be evaluated as claimed; yet semantogenic considerations preclude a determination based solely on words appearing in the claims. In the final

analysis under 101, the claimed invention, as a whole, must be evaluated for what it is.") (Abele, 684 F.2d 902, 907, 214 USPQ 682, 687(CCPA 1982)). See also In re Johnson, 589 F.2d 1070, 1077, 200 USPQ 199, 206 (CCPA 1978) ("form of the claim is often an exercise in drafting"). Thus, nonstatutory music is not a computer component and it does not become statutory by merely recording it on a compact disk. Protection for this type of work is provided under copyright law.

Examiner suggest Applicant's amend at least independent claim 43 to positively recite that the system for predicting parts for an onsite repair *actually* selects the parts for the onsite repair rather that the recited "enable a selection of parts for the onsite repair" to overcome this rejection.

Further Regarding Claims 43-54, Claims 43-54 recite a "system" for predicting a set of parts for a onsite repair however the "system" as claimed merely represents a collection of data and a "metric calculator" (i.e. a software component, code, module, etc.) wherein there is no indication that the system, as claimed, comprises any elements other than a compilation of data (repair history, cost data, etc.) and/or software (e.g. a computer processor having memory for executing the code is not claimed) nor is the software is recorded on computer-readable medium and/or capable of execution by a computer, therefore making the recited system merely software per se.

Examiner suggests Applicant's amend independent Claim 43 to recite that the proposed system includes one or more elements, such as computer hardware, and/or

that the proposed software is recorded on computer-readable medium and capable of execution by a computer to overcome this rejection.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 43-54 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding Claims 43-54 the disclosure does not clearly define the phrase "system." A system as claimed could contain any of a plurality of elements and without further definition of the system elements the phrase as claimed vague and indefinite.

For the purposes of examination examiner interpreted the phrase system to include computer hardware for executing the claimed software component(s).

Regarding Claims 49-52, Claims 49-52 recite the limitation "the selection" in Claim 43. There is insufficient antecedent basis for this limitation in the claim.

Claim Objections

7. Claims 43 and 53-54 are objected to because of the following informalities.

Regarding Claim 43, Claim 43 is objected to because of the following informalities: Claim 43 recites "the waste metric *enable* a selection of the parts" (emphasis added) however the system does not actually select parts for an onsite repair. For the purposes of examination examiner assumes the applicant will amend the claim to recite that system actually selects parts for an onsite repair. Appropriate correction is required.

Regarding Claim 53, Claim 53 is objected to because of the following informalities: Claim 53 recites "wherein the waste metric *enable* a determination of which products are least desirable to support" (emphasis added) however the system does not actually determine which products are least desirable to support. For the purposes of examination examiner assumes the applicant will amend the claim to recite that system *actually* determines which products are least desirable to support. Appropriate correction is required.

Regarding Claim 54, Claim 54 is objected to because of the following informalities: Claim 54 recites "wherein the waste metric *enable* a determination of which personnel to target for additional training." (emphasis added) however the system does not actually determine which personnel to target for additional training. For the

purposes of examination examiner assumes the applicant will amend the claim to recite that system *actually* determines which personnel to target for additional training.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 28-30, 33-35 and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Mamer, John W. et al., Job Completion Based Inventory Systems: Optimal Policies for Repair Kits and Spare Machines (1985).

Regarding Claim 28 Mamer et al. teach a method for predicting a set of parts for an onsite repair comprising:

- determining a cost of mis-predicting (over/under forecast/estimate, overstock, under stock, surplus, excess, stock out, shortage, incomplete job, fill-rate, service level, lost demand, backorder, etc.; "If any required part or tool is not in the repair kit, the repair job is broken. The penalty or inconvenience cost is assumed to be proportional...", Abstract; Paragraph 1, page 703; "L=penalty cost for a broken (incomplete) job", Line 3, Page 705; Paragraph 4, page 705; Paragraphs 4-5, Page 712; Figures 2-3; Equation 2.2) each of a set of parts that may be replaced during the onsite repair in response to a repair history ("the frequencies can be estimated from historical job data", Paragraphs 2-3, Page 706; Tables 1-2); and

- selecting the parts in response to the costs (optimal kit; Abstract; Paragraph 1, Page 704; Equation 2.4).

Regarding Claim 29 Mamer et al. teach a method for predicting a set of parts for an onsite repair wherein the costs include a cost associated with unnecessarily sending the corresponding part to the repair site (unused parts, inventory holding cost, carrying cost, etc.; e.g. business analyzing "standard exchange curve" which depict the trade-offs between different part inventory policies/repair kits; cost (of sending a part that is not needed) vs. performance (success/fill rate) analysis; Last Paragraph, Page 705; Paragraph 4, Page 708; Equations 2.2, 2.6).

Regarding Claim 30 Mamer et al. teach a method for predicting a set of parts for an onsite repair wherein the costs include a cost associated with not sending the corresponding part when needed to the onsite repair (incomplete/broken job, shortage, penalty/inconvenience cost, etc.; Last Paragraph, Page 705; Paragraphs 1-6, Page 706; Paragraph 1, Page 707; Paragraph 4, Page 708; Equations 2.2, 2.6).

Regarding Claim 33 Mamer et al. teach a method for predicting a set of parts for an onsite repair wherein the cost includes determining a number of times that each part was under-predicted (shortage, stock-out, out-of-stock, backorder, etc.) and a number of times that each part was over-predicted (excess, surplus, etc.) and determining a number of times that each part was correctly predicted (supply met demand, parts usage, fraction part needed for each job type, part usage probabilities, backorder, loss

demand, etc.; Last Paragraph, Page 704; Paragraph 1, and Last Two Paragraphs, Page 705; Paragraphs 1-3, Page 706; Tables 1-2; Figures 2-3).

Regarding Claim 34 Mamer et al. teach a method for predicting a set of parts for an onsite repair wherein the cost includes combining the number of times with a cost associated with under-predicting and over-predicting parts (Paragraphs 1-5, page 705; Equations 2.2, 2.6).

Regarding Claim 35 Mamer et al. teach a method for predicting a set of parts for an onsite repair further comprising determine the costs associated with under and over-predicting parts (Paragraphs 1-5, page 705; Equations 2.2, 2.6).

Regarding Claim 37 Mamer et al. teach a method for predicting a set of parts for an onsite repair wherein the parts are selected for transport to the onsite repair (field service/repair; Abstract; Last Paragraph, Page 703; "Thus the kit inventories can be viewed as an additional inventory investment whose purpose is to achieve a certain job completion rate on field repair calls", Paragraph 1, Page 705; Paragraphs 2-4, Page 716).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claims 31-32, 36, 38-40 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mamer, John W. et al., Job Completion Based Inventory Systems: Optimal Policies for Repair Kits and Spare Machines (1985) as applied to claims 28-30, 33-35 and 37 above and further in view of Patton et al., Service Management Principles and Practices (1994).

Regarding Claim 31 Mamer et al. teach a method for predicting repair parts in response to repair history (failure data) wherein the history is used to determine/define a plurality of job types (specific jobs/repairs based on the repair history; Paragraphs 1-4, Page 706; Last Paragraph, Page 717; Paragraph 1, Page 718).

Mamer et al. does not expressly teach identifying a set of symptoms associated with a product as claimed.

Patton et al. teach identifying a set of symptoms associated with a product (i.e. diagnostics, troubleshooting, predictive maintenance, etc.; Pages 130-33, 136-139; Paragraphs 4-5, Page 198; Last Paragraph, Page 1999; Figures 9-1, 9-7; Tables 7-1, 9-

1) in an analogous art of service management for the purposes of ensuring that "A service technician dispatched to a specific location to repair a specific piece of equipment can know exactly what is to be repaired and exactly what tools, test equipment and parts to take along" (Last Paragraph, Page 199).

More generally Patton et al. teach a system and method for service management comprising:

- predicting parts for an onsite repair in response to a plurality of information including but not limited to service/repair history (service forecasting, predictive maintenance, etc.; Figure 5-1; Table 5-1; Pages 72-73; Paragraph 1, Page 139; Last Paragraph, Page 163; "A good support system proactively determines what parts will probably be required and delivers those parts to meet the technician.", Paragraph 1, Page 198; Figures 9-1, 9-7; Tables 9-1, 9-2);

- utilizes averages when analyzing time series data ("Moving averages are better for time series analysis than are single point estimates", Paragraph 2, Page 73);

- parts inventory management based on repair history (part usage, failure probabilities, etc.) and other service data (Pages 146-148);

- service call management ("The call management organization acts as the heart of the service operation function. Its purpose is to validate customer status, determine the real customer needs, assign priorities and pass the call to the person best qualified to help the caller.", Paragraphs 4-5, Page 198);

- configuration management ("the service organization is completely aware of the exact configuration of each piece of equipment required to service. A service

technician dispatched to a specific location to repair a specific piece of equipment can know exactly what is to be repaired and exactly what tools, test equipment and parts to take along.", Last Paragraph, Page 199).

- capturing, storing, analyzing and reporting on a plurality part service data including but not limited to part usage repair costs, technician performance, product/equipment performance, preventive metrics and the like (parts per unit repair, no trouble found, actual vs. estimated, first call fix rate, callback rate, attempts per incident, call duration, etc.; Performance Measurement and Reporting, Pages 44-48, 50-51; Table 3-2; "Percentage of required parts on hand, equipment down waiting for parts and parts turnover rates are useful measures for individual technicians.", Last Paragraph, Page 51);

- flagging repairs/service information to indicate/alert users to one or more conditions/information (corrective maintenance, alerts, condition monitoring; Last Paragraph, Page 196; Paragraph 1, Page 197; Last Paragraph, Page 142; Figure 9.1);

- identifying training needs and providing individualized training based on observed/measure performance metrics (Pages 44-48; Last Paragraph, Page 117; Paragraph 2, Page 124); and

- automating service part management utilizing computers (information systems, apparatus, etc.; "Most service parts are low usage and are best forecast by humans with computerized historical data and information on expected market demand and technical supply.", Paragraph 1, Page 164; Information Systems, Pages 242-249).

It would have been obvious to one skilled in the art at the time of the invention that the method for predicting the parts needed for a repair as taught by Mamer et al. would have benefited from identifying a set of symptoms associated with a product in view of the teachings of Patton et al.; the resultant system/method enabling business to ensure that "A service technician dispatched to a specific location to repair a specific piece of equipment can know exactly what is to be repaired and exactly what tools, test equipment and parts to take along." (Patton et al.: Last Paragraph, Page 199).

Regarding Claim 32 Mamer et al. teach a method for predicting repair parts in response to repair history (failure data) wherein the history is used to determine/define a plurality of job types (specific jobs/repairs based on the repair history; Paragraphs 1-4, Page 706; Last Paragraph, Page 717; Paragraph 1, Page 718).

Mamer et al. does not expressly teach identifying a set of symptoms associated with a product as claimed.

Patton et al. teach identifying a set of symptoms associated with a product (i.e. diagnostics, troubleshooting, predictive maintenance, etc.; Pages 130-33, 136-139; Paragraphs 4-5, Page 198; Last Paragraph, Page 199; Figures 9-1, 9-7; Tables 7-1, 9-1) in an analogous art of service management for the purposes of ensuring that "A service technician dispatched to a specific location to repair a specific piece of

equipment can know exactly what is to be repaired and exactly what tools, test equipment and parts to take along" (Last Paragraph, Page 199).

It would have been obvious to one skilled in the art at the time of the invention that the method for predicting the parts needed for a repair as taught by Mamer et al. would have benefited from identifying a set of symptoms associated with a product in view of the teachings of Patton et al.; the resultant system/method enabling business to ensure that "A service technician dispatched to a specific location to repair a specific piece of equipment can know exactly what is to be repaired and exactly what tools, test equipment and parts to take along." (Patton et al.: Last Paragraph, Page 199).

Regarding Claim 36 Mamer et al. teach a method for predicting the parts needed for a repair wherein a plurality of costs are taken into account when determining an optimal repair kit (set of parts, tools, etc.; cost per kit, number of kits, average number of repairs per kit, tool cost, spare cost, demand loss, etc.; Paragraphs 1-2, Page 705; Table 1; Figures 2-3).

Mamer et al. does not expressly teach that one of the costs further comprises an average cost as claimed.

Official notice is taken that utilizing averages to represent/generalize numbers and/or using averages when individual/specific data is unavailable is old and well known in the art.

It would have been obvious to one skilled in the art at the time of the invention that the method for predicting/optimizing the parts needed for a repair, with its ability to associate and determine costs for each part in each technician's inventory, as taught by Mamer et al. would have benefited from utilizing average costs in view of the teachings of official notice; the resultant system using average costs to predict/optimize parts needed for a repair thereby simplifying the calculations that need to be made and/or reducing the amount of information required to be maintained by not requiring the user/business to track (associate, determine, etc.) costs for each part inventoried by each technician.

Regarding Claim 38 Mamer et al. does not expressly that determining the parts further comprises selecting the parts for which training of call qualifiers is to be updated as claimed.

Patton et al. teach providing general and individualized training to a plurality of users (technicians, service center representatives, call qualifiers, etc.) based on a plurality of monitored human performance metrics (accuracy, completeness, response time, productive time, productivity, effectiveness, etc.) and test/examinations (Page 48;

Paragraph 2, Page 53; Service Training, Pages 117-125; Table 3-2) in an analogous art of service management for the purposes improving the users and business's performance as well as the customer's satisfaction (Paragraph 2, Page 53).

It would have been obvious to one skilled in the art at the time of the invention that the method for predicting the parts needed for a repair as taught by Mamer et al. would have benefited from selecting the parts for which training of call qualifiers (i.e. identifying training requirements/opportunities) in view of the teachings of Patton et al. the resultant system/method improving the users and business's performance as well as the customer's satisfaction (Patton et al.: Paragraph 2, Page 53).

Regarding Claim 39 Mamer et al. does not expressly teach that determining the parts further comprises selecting the parts for which a flag is to be provided to call qualifiers (users, technicians, etc.) as claimed.

Patton et al. teach flagging repairs/service information to indicate/alert users to one or more service/repair conditions/information/needs (corrective maintenance, alerts, condition monitoring; Last Paragraph, Page 196; Paragraph 1, Page 197; Last Paragraph, Page 142; Figure 9.1) in an analogous art of service management for the purposes of alerting users to potential maintenance/service needs (Last Paragraph, Page 142; Paragraph 1, Page 143).

It would have been obvious to one skilled in the art at the time of the invention that the method for predicting/optimizing parts needed for a repair as taught by Mamer et al. would have benefited from flagging/identifying parts/service requirements/needs to users in view of the teachings of Patton et al. the resultant system/method alerting users to potential maintenance/service needs (Patton et al.: Last Paragraph, Page 142; Paragraph 1, Page 143).

Regarding Claim 40 Mamer et al. teach a method for predicting repair parts wherein determining the parts further comprises selecting the parts which are to be stocked in a field kit as part of a tour of repairs (Paragraph 2, Page 703).

While Mamer et al. inherently teach a mode of transportation (foot, vehicle) as part of the field repair process Mamer et al. is silent on the specific mode of transporting (carrying) the parts needed for a repair (i.e. repair vehicle).

Official notice is taken that carrying/transporting service parts (tools, kits, items, components, supplies, materials, etc.) utilizing a repair vehicle (can, van, truck, etc.) is old and very well known and provides a convenient method for transporting the technician to/from the repair site.

It would have been obvious to one skilled in the art at the time of the invention that the method for predicting/optimizing parts to be carried to a field repair as taught by

Mamer et al. would have benefited from having the technician utilize a vehicle to transport/carry the parts necessary for a repair in view of the teachings of official notice; the resultant system enabling the technician to conveniently carry heavy and/or bulky parts.

Regarding Claim 42 Mamer et al. does not expressly determining which personnel to target for additional training based on the expected wastes as claimed.

Patton et al. teach providing general and individualized (targeted) training to a plurality of users (technicians, service center representatives, call qualifiers, etc.) based on a plurality of monitored human performance metrics (accuracy, completeness, response time, productive time, productivity, effectiveness, etc.) and test/examinations (Page 48; Paragraph 2, Page 53; Service Training, Pages 117-125; Table 3-2) in an analogous art of service management for the purposes improving the users and business's performance as well as the customer's satisfaction (Paragraph 2, Page 53).

It would have been obvious to one skilled in the art at the time of the invention that the method for predicting the parts needed for a repair as taught by Mamer et al. would have benefited from selecting the parts for which training of call qualifiers (i.e. identifying training requirements/opportunities) in view of the teachings of Patton et al. the resultant system/method improving the users and business's performance as well as the customer's satisfaction (Patton et al.: Paragraph 2, Page 53).

12. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mamer et al., Job Completion Based Inventory Systems: Optimal Policies For Repair Kits and Spare Machines (1985) in view of Patton et al., Service Management Principles and Practices (1994) as applied to claims 28-40 and 42 above and further in view of Glovitz et al., U.S. Patent No. 5,862,421.

Regarding Claim 41 Mamer et al. teach a method for predicting a set of parts for an onsite repair further comprises determining which parts are least desirable to support (carry) based on the trade-off analysis between the cost and the performance of the part (parts preference ordering/ ranking; Paragraphs 1 and 4-5, Page 708; Last Paragraph, Page 711; Equation 3.3; Tables 1-2).

Mamer et al. does not expressly teach determining which products are least desirable to support in response to the costs as claimed.

Glovitz et al. inherently teach determining which products are no longer desirable to support wherein the system determines the reliability and/or profitability of equipment (product, item, etc.) utilizing information collected during the repair process, in an analogous art of service/repair management (i.e. unprofitable and/or unreliable products being inherently undesirable to keep/support; Column 1, Lines 50-61).

More generally Glovitz et al. teach a method and system for managing the repair of field equipment wherein service requests are made/received, technicians are

assigned/dispatched and repairs are made/completed (Abstract; Column 1, Lines 29-61) comprising:

- identifying a set of symptoms (failure type/mode, nature of the malfunction, etc.) for the purposes of accepting and appropriately assigning service requests based on the symptoms, technician skill level and other factors (nature of the repair/failure; Column 1, Lines 41-60; Column 2, Lines 42-53; Column 10, Lines 36-44; Column 14, Lines 20-25; Table 1, Fields 5 and 27-28);

- analyzing a repair history for the product (item, equipment, etc.) for the purposes of diagnosing (classifying, qualifying, understanding, etc.) the nature of the service/repair request (Column 1, Lines 41-60; Column 2, Lines 42-53; Column 10, Lines 36-44; Column 14, Lines 20-25; Table 1, Fields 5 and 27-28);

- tracking and controlling the inventory of repair parts, specifically the tracking of used repair parts for billing and other purposes; and

- utilizing service/repair information (call records, parts used, etc.) to evaluate the performance of technicians ("Data collected for inventory usage and service of specific copiers may be used to evaluate equipment reliability and profitability. The data may also be used to evaluate a technician's performance.", Column 1, Lines 50-61).

It would have been obvious to one skilled in the art at the time of the invention that the method for predicting/optimizing the parts needed for a repair, with its ability to identify parts which are not desirable/optimal to stock/carry, as taught by Mamer et al. would have benefited from determining the profitability and/or reliability of the products

being repaired in view of the teachings of Glovitz et al.; the resultant system/method enabling users to minimize costs by eliminating parts/products that are no longer desirable to stock/carry/support (Glovitz et al.: Column 1, Lines 50-61).

13. Claims 43-52 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mamer, John W. et al., Job Completion Based Inventory Systems: Optimal Policies for Repair Kits and Spare Machines (1985) in view of Patton et al., Service Management Principles and Practices (1994).

Regarding Claim 43 Mamer et al. teach a system and method for predicting a set of parts for an onsite repair of a product comprising:

- repair history that includes information pertaining to a set of prior onsite repairs (Paragraphs 1-5, Page 706; Tables 1-2);

- cost data that includes a set of costs associated with mis-predicting (incorrectly, inaccurately, over-stock, under-stock, excess, shortage, surplus, etc.) each of a set of parts that may be replaced during the onsite repair (Last Paragraph, Page 704; Paragraphs 1-5, Page 705; Equations 2.2, 2.6; Figures 2-3);

- determining a waste metric for each part in response to the repair history and cost data (Paragraphs 1-5, Page 706; Equations 2.5-2.6; Paragraphs 1-4 and Last Paragraph, Page 707; Paragraphs 1-5, Page 711; Equation 2.6 Tables 1-2; Figures 2-3); and

- selects a set of parts for the onsite repair based on the repair history, cost data and/or waste metric (optimal kit; Paragraphs 2-6, Page 706; Paragraph 1, Page 707; Equation 2.6).

Mamer et al. does not expressly teach a system (computer system) for implementing the method for predicting/optimizing the parts necessary for a repair as claimed.

Patton et al. teach a system and method for predicting a set of parts for an onsite repair (i.e. automating service part management utilizing computers; Paragraph 1, Page 164; Information Systems, Pages 242-249) in an analogous art of service management for the purposes of ensuring that "A service technician dispatched to a specific location to repair a specific piece of equipment can know exactly what is to be repaired and exactly what tools, test equipment and parts to take along" (Last Paragraph, Page 199; "A good support system proactively determines what parts will probably be required and delivers those parts to meet the technician.", Paragraph 1, Page 198; Figures 9-1, 9-7; Tables 9-1, 9-2).

It would have been obvious to one skilled in the art at the time of the invention that the method for predicting a set of parts for an onsite repair as taught by Mamer et al. would have benefited from being automated (i.e. made a system) in view of the teachings of Patton et al.; the resultant system/method enabling "proactively determines what parts will probably be required and delivers those parts to meet the technician.", (Patton et al.: Paragraph 1, Page 198).

Regarding Claim 44 Mamer et al. teach a method for predicting a set of parts for an onsite repair wherein the waste metric is determined by determining a number of times that each part was under-predicted (shortage, stock-out, out-of-stock, backorder, etc.) and a number of times that each part was over-predicted (excess, surplus, etc.) and determining a number of times that each part was correctly predicted (supply met demand; parts usage, fraction part needed for each job type, part usage probabilities, backorder, loss demand, etc.; Last Paragraph, Page 704; Paragraph 1, and Last Two Paragraphs, Page 705; Paragraphs 1-3, Page 706; Tables 1-2; Figures 2-3).

Regarding Claims 45 Mamer et al. teach a method for predicting repair parts in response to repair history (failure data) wherein the history is used to determine/define a plurality of job types (specific jobs/repairs based on the repair history; Paragraphs 1-4, Page 706; Last Paragraph, Page 717; Paragraph 1, Page 718).

Mamer et al. does not expressly teach that the waste metric is determined in response to a set of symptoms associated with the onsite repair as claimed.

Patton et al. teach identifying a set of symptoms associated with a product (i.e. diagnostics, troubleshooting, predictive maintenance, etc.; Pages 130-33, 136-139; Paragraphs 4-5, Page 198; Last Paragraph, Page 1999; Figures 9-1, 9-7; Tables 7-1, 9-1) in an analogous art of service management for the purposes of ensuring that "A

service technician dispatched to a specific location to repair a specific piece of equipment can know exactly what is to be repaired and exactly what tools, test equipment and parts to take along" (Last Paragraph, Page 199).

It would have been obvious to one skilled in the art at the time of the invention that the method for predicting the parts needed for a repair as taught by Mamer et al. would have benefited from identifying a set of symptoms associated with a product in view of the teachings of Patton et al.; the resultant system/method enabling business to ensure that "A service technician dispatched to a specific location to repair a specific piece of equipment can know exactly what is to be repaired and exactly what tools, test equipment and parts to take along." (Patton et al.: Last Paragraph, Page 199).

Regarding Claim 46 Mamer et al. teach a method for predicting a set of parts for an onsite repair wherein the repair history includes an identification of a set of parts sent to the prior onsite repairs and a list of actual parts needed in the prior onsite repairs (Last Two Paragraphs, Page 710; Paragraphs 1-5, Page 711; Section 7, Pages 716-717; Last Paragraph, Page 717).

Regarding Claim 47 Mamer et al. teach a method for predicting a set of parts for an onsite repair wherein the cost data includes a set of costs associated with over-predicting (excess, surplus) and a set of costs for under-predicting (stock out, shortage, backorder, lost sales, etc.) the parts (Paragraphs 1-5, page 705; Equations 2.2, 2.6).

Regarding Claim 48 Mamer et al. teach a method for predicting a set of parts for an onsite repair further comprises determining a waste metric for a plurality of parts (Paragraphs 1-5, Page 706; Equations 2.5-2.6; Paragraphs 1-4 and Last Paragraph, Page 707; Paragraphs 1-5, Page 711; Equation 2.6 Tables 1-2; Figures 2-3).

Regarding Claim 49 Mamer et al. teach a method for predicting a set of parts for an onsite repair further comprising selecting parts for transport to an onsite repair (field service/repair; Abstract; Last Paragraph, Page 703; "Thus the kit inventories can be viewed as an additional inventory investment whose purpose is to achieve a certain job completion rate on field repair calls", Paragraph 1, Page 705; Paragraphs 2-4, Page 716).

Regarding Claim 50 Mamer et al. does not expressly that determining the parts further comprises selecting the parts for which training of call qualifiers is to be updated as claimed.

Patton et al. teach providing general and individualized training to a plurality of users (technicians, service center representatives, call qualifiers, etc.) based on a plurality of monitored human performance metrics (accuracy, completeness, response time, productive time, productivity, effectiveness, etc.) and test/examinations (Page 48; Paragraph 2, Page 53; Service Training, Pages 117-125; Table 3-2) in an analogous art

of service management for the purposes improving the users and business's performance as well as the customer's satisfaction (Paragraph 2, Page 53).

It would have been obvious to one skilled in the art at the time of the invention that the method for predicting the parts needed for a repair as taught by Mamer et al. would have benefited from selecting the parts for which training of call qualifiers (i.e. identifying training requirements/opportunities) in view of the teachings of Patton et al. the resultant system/method improving the users and business's performance as well as the customer's satisfaction (Patton et al.: Paragraph 2, Page 53).

Regarding Claim 51 Mamer et al. does not expressly teach that determining the parts further comprises selecting the parts for which a flag is to be provided to call qualifiers (users, technicians, etc.) as claimed.

Patton et al. teach flagging repairs/service information to indicate/alert users to one or more service/repair conditions/information/needs (corrective maintenance, alerts, condition monitoring; Last Paragraph, Page 196; Paragraph 1, Page 197; Last Paragraph, Page 142; Figure 9.1) in an analogous art of service management for the purposes of alerting users to potential maintenance/service needs (Last Paragraph, Page 142; Paragraph 1, Page 143).

It would have been obvious to one skilled in the art at the time of the invention that the method for predicting/optimizing parts needed for a repair as taught by Mamer et al. would have benefited from flagging/identifying parts/service requirements/needs to users in view of the teachings of Patton et al. the resultant system/method alerting users to potential maintenance/service needs (Patton et al.: Last Paragraph, Page 142; Paragraph 1, Page 143).

Regarding Claim 52 Mamer et al. teach a method for predicting repair parts wherein determining the parts further comprises selecting the parts which are to be stocked in a field kit as part of a tour of repairs (Paragraph 2, Page 703).

While Mamer et al. inherently teach a mode of transportation (foot, vehicle) as part of the field repair process Mamer et al. is silent on the specific mode of transporting (carrying) the parts needed for a repair (i.e. repair vehicle).

Official notice is taken that carrying/transporting service parts (tools, kits, items, components, supplies, materials, etc.) utilizing a repair vehicle (can, van, truck, etc.) is old and very well known and provides a convenient method for transporting the technician to/from the repair site.

It would have been obvious to one skilled in the art at the time of the invention that the method for predicting/optimizing parts to be carried to a field repair as taught by

Mamer et al. would have benefited from having the technician utilize a vehicle to transport/carry the parts necessary for a repair in view of the teachings of official notice; the resultant system enabling the technician to conveniently carry heavy and/or bulky parts.

Regarding Claim 54 Mamer et al. does not expressly that the waste metric enables a determination of which personnel to target for additional training.

Patton et al. teach providing general and individualized (targeted) training to a plurality of users (technicians, service center representatives, call qualifiers, etc.) based on a plurality of monitored human performance metrics (accuracy, completeness, response time, productive time, productivity, effectiveness, etc.) and test/examinations (Page 48; Paragraph 2, Page 53; Service Training, Pages 117-125; Table 3-2) in an analogous art of service management for the purposes improving the users and business's performance as well as the customer's satisfaction (Paragraph 2, Page 53).

It would have been obvious to one skilled in the art at the time of the invention that the method for predicting the parts needed for a repair as taught by Mamer et al. would have benefited from selecting the parts for which training of call qualifiers (i.e. identifying training requirements/opportunities) in view of the teachings of Patton et al. the resultant system/method improving the users and business's performance as well as the customer's satisfaction (Patton et al.: Paragraph 2, Page 53).

14. Claim 53 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mamer et al., Job Completion Based Inventory Systems: Optimal Policies For Repair Kits and Spare Machines (1985) in view of Patton et al., Service Management Principles and Practices (1994) as applied to claim 43-52 and 54 above and further in view of Glovitz et al., U.S. Patent No. 5,862,421.

Regarding Claim 53 Mamer et al. teach a method for predicting a set of parts for an onsite repair further comprises determining which parts are least desirable to support (carry) based on the trade-off analysis between the cost and the performance of the part (parts preference ordering/ ranking; Paragraphs 1 and 4-5, Page 708; Last Paragraph, Page 711; Equation 3.3; Tables 1-2).

Mamer et al. does not expressly teach determining which products are least desirable to support in response to the costs as claimed.

Glovitz et al. inherently teach determining which products are no longer desirable to support wherein the system determines the reliability and/or profitability of equipment (product, item, etc.) utilizing information collected during the repair process, in an analogous art of service/repair management (i.e. unprofitable and/or unreliable products being inherently undesirable to keep/support; Column 1, Lines 50-61).

More generally Glovitz et al. teach a method and system for managing the repair of field equipment wherein service requests are made/received, technicians are

assigned/dispatched and repairs are made/completed (Abstract; Column 1, Lines 29-61) comprising:

- identifying a set of symptoms (failure type/mode, nature of the malfunction, etc.) for the purposes of accepting and appropriately assigning service requests based on the symptoms, technician skill level and other factors (nature of the repair/failure; Column 1, Lines 41-60; Column 2, Lines 42-53; Column 10, Lines 36-44; Column 14, Lines 20-25; Table 1, Fields 5 and 27-28);

- analyzing a repair history for the product (item, equipment, etc.) for the purposes of diagnosing (classifying, qualifying, understanding, etc.) the nature of the service/repair request (Column 1, Lines 41-60; Column 2, Lines 42-53; Column 10, Lines 36-44; Column 14, Lines 20-25; Table 1, Fields 5 and 27-28);

- tracking and controlling the inventory of repair parts, specifically the tracking of used repair parts for billing and other purposes; and

- utilizing service/repair information (call records, parts used, etc.) to evaluate the performance of technicians ("Data collected for inventory usage and service of specific copiers may be used to evaluate equipment reliability and profitability. The data may also be used to evaluate a technician's performance.", Column 1, Lines 50-61).

It would have been obvious to one skilled in the art at the time of the invention that the method for predicting/optimizing the parts needed for a repair, with its ability to identify parts which are not desirable/optimal to stock/carry, as taught by the combination of Mamer et al. and Patton et al. would have benefited from determining

the profitability and/or reliability of the products being repaired in view of the teachings of Glovitz et al.; the resultant system/method enabling users to minimize costs by eliminating parts/products that are no longer desirable to stock/carry/support (Glovitz et al.: Column 1, Lines 50-61).

Conclusion

This Office action has an attached requirement for information under 37 C.F.R. § 1.105. A complete response to this Office action must include a complete response to the attached requirement for information. The time period for reply to the attached requirement coincides with the time period for reply to this Office action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Squeglia et al., U.S. Patent Publication No. 2002/0156692, teach a system and method for predictive, preventive and onsite repair and maintenance.

- Cohen et al., Near-Optimal Service Constrained Stocking Policies for Spare Parts (1989) teaches a method for predicting a set of parts for a plurality of onsite repairs wherein the method determines a set of waste metrics/costs associated with mis-predicting each of a set of parts for an onsite repair including but not limited to shortage costs (costs of not stocking/sending the required part), inventory holding costs (costs of sending/stocking a unnecessary part), transportation cost to the repair site, cost of issuing/ordering the part and the like.

- Cohen et al., Optimizer: IBM's Multi-Echelon Inventory System for Managing Service Logistics (1990), teaches a system and method for predicting a set of parts for an onsite repair of a product to ensure the efficient deployment of the parts vital to getting the customer's machine fixed/repaired comprising repair history, cost data (e.g.

emergency transportation cost of mis-predicted parts), on-site stock locations, repair/serviceman vehicles, part tracking and demand forecasting.

- Lahiria, Santi, A decision-support system for minimization of logistic support cost (1992), teaches a system and method for predicting a set of parts for an onsite repair wherein the system selects a set of parts for a plurality of onsite repairs utilizing repair history and cost data (material cost, backorder cost, field engineer cost for additional trips because of non-availability of parts, etc.).

- Ricardo et al., Dealer Inventory Management Systems (1993) teaches a system and method for predicting the parts for a plurality of onsite repairs wherein the system/method selects a set of parts for the repairs based on the cost of mis-predicting each of a set of parts that may be replaced during the repair (e.g. shortage costs, undershoot, backorder, etc.).

- Synder, A computerized system for forecasting spare part sales (1993), teaches a system and method for predicting a set of parts for a plurality of repairs for the purposes of optimizing spare parts inventory (i.e. avoid excessive stock outs/shortages and excess/surplus). Synder further teaches that the repair parts demand forecasting determines and monitors forecasting errors (mis-predictions).

- Langan, Maintenance Automation (1995), teaches several systems and methods for computerized maintenance management systems wherein the system(s) combine a plurality of data (e.g. equipment history, repair history, spare part inventories, etc.) to proactively/preventively maintain a plurality of products. Langan further teaches

that these system(s) address hidden maintenance costs such as excessive spare part inventories.

- Heuts et al., Inventory Management of Repairable Service Parts for Personal Computers (1996), teaches a system and method for predicting a set of parts for a plurality of repairs and managing/optimizing the inventory/stocking of the set of parts based on the predicted demand, cost and other factors (e.g. scrap rate, procurement cost, holding cost, net demand, return/unused parts, etc.).

- Beck, Statistical Process Control and Selectable Forecast Calendar reduce GE Aircraft Engine's Parts Inventory (1999), teaches a system and method for forecasting the demand for spare parts and managing spare part inventories based on the forecasted demand in order to optimize spare part inventories (i.e. avoid excessive stock outs/shortages and surpluses).

- Heuts et al., A combined forecast inventory control for spare parts (2000), teaches a system and method for predicting (forecast) a set of parts needed for a plurality of repairs of a product and managing/optimizing the inventory (stocking, carrying) of the set of parts based on the predicted demand and costs.

- Cohen et al., Saturn's Supply Chain Innovation (2000), teaches a system and method for predicting a set of parts for a plurality of onsite repairs based on the forecasted/predicted parts demand in order to avoid/minimize mis-predicting (over/under predicting) the set of parts (surplus, stock out, etc.).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott L. Jarrett whose telephone number is (571) 272-7033. The examiner can normally be reached on Monday-Friday, 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hafiz Tariq can be reached on (571) 272-6729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SJ
8/9/2006

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